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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,678

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Naoki Toyoshima

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EXAMINER

GARLAND, STEVEN R

ART UNIT

PAPER NUMBER

2125

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

80

Office Action Summary	Application No.	Applicant(s)	
	10/786,678	TOYOSHIMA ET AL.	
	Examiner	Art Unit	
	Steven R. Garland	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-10,12-15,17,18,23-30,32-35,37-40,42,43,46-70,72-78 and 81-105 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/13/07</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 1-5,7-10,12-15,17,18,23-30,32-35,37-40,42,43,46-70,72-78 and 81-105.

DETAILED ACTION

1. Claims 1-5,7-10,12-15,17,18,23-30,32-35,37-40,42,43,46-70,72-78, and 81-105 are pending. Claims 6,11,16,19-22,31,36,41,44,45,71,79, and 80 have been canceled.

2. In view of the amendments to the specification the previous objections to the specification are withdrawn

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-5,7-10,12-15,17,18,23-30,32-35,37-40,42,43,46-70,72-78, and 81-105 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-45 of copending Application No. 11/458637. Although the conflicting claims are not identical, they are not patentably

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distinct from each other because for example comparing instant claim 1 to claim 42 of the copending application both are directed to

A computer system, comprising: a processor; at least one input device; at least one output device; at least one communications interface device; a storage device containing instructions for performing a method, the method comprising: collecting production data; collecting non-production data; performing calculations on the production data; performing calculations on the non-production data; keying production data; keying non-production data; combining the production data and the non-production data into a single data set; analyzing said data set; and examining the analysis of the data; and a bus connecting the processor, input device, output device and storage device.

The only differences are that the instant application specifies that the production data be taken from an item and that the non-production data be taken from the entire facility while the copending claim does not specify where the production and non-production data is taken from.

However when the copending claim is read in light of its specification these specific choices are obviously included in the unspecified forms of production and non-production data of the copending claim and it would have been obvious to one of ordinary skill in the art to modify the copending claim to use such specific choices for the production and non-production data.

Similar comparisons can be made for the other claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claim 48 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 55. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 48 and 55 are now duplicates. Note claim 48 as presented now includes the "identifying points of data commonality...".

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 34,35,37-40, 42, 43, 46, 47 and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For example in claim 34, lines 3-6 are unclear as to what is to be regarded as production data. In particular it is uncertain what the phrase "collecting production data by taking at least one measurement from an electronic device manufacturing process directly related to the electronic device manufacturing process and that is not measured on an item that is undergoing processing in the electronic device manufacturing process" actually means when viewed in light of the specification.

From the first part of this phrase it would appear that "production data" could be measurements directly related to the manufacturing process being performed (page 6,

lines 30,31, and page 7, line 1). However the specification on page 7, lines 11-22, provides a much broader definition in that the production data can be any data (the data is not required to even be a measurement) that relates directly to the manufacturing process. The second part of the phrase causes confusion as to what is to be regarded as the production data, from the specification page 2, lines 14-17, states that the "Collection of production data includes at least one of collecting parametric production data, collecting film thickness data, critical dimension data, and any other data that is relevant to the production process and its condition."

In the specification page 3, line 16 refers to equipment data as facility data which is a form of non-production data. However page 7, lines 11-22, then refers to data such as equipment temperature as offline production data and it is not clear as to whether equipment data is to be regarded as production or non production data. Page 7, lines 19-22, appear to specify various forms of offline production data but add confusion in that it states that the offline data can be some other measurement directly related to the manufacture but does not specify what is meant by directly related or what the other measurements can be or can not be. The claims when viewed in light of the specification require considerable speculation as to what is to be regarded as non production data and production data in its on line and off line forms.

For example page 3, lines 16-18, describes equipment control data or equipment data as being facility (non-production) data such control data would appear to be production data in that it is directly related to the manufacturing process if the equipment is used in the process, but by the cited text it is non production data.

Claim 42 has a similar problem to that of claim 34.

In claim 66 it is unclear what type of data is being collected and what type of data is to be regarded as production data.

The remaining claims fall with the parent claims.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1- 5,7-10,12-15,26-30,32-35,37-40,61-70,72-76, and 95-101, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pasadyn et al. 2004/0029299 in view of Funk 2005/0165731 .

Pasadyn et al. 2004/0029299 teaches a manufacturing process which uses a manufacturing data, metrology data, and electrical data. (abstract) Pasadyn also teaches processing semiconductor wafers to make electrical devices paragraph 0010,

periodic sampling (temporal periodicity) or at a triggering event 0011,0032, acquiring metrology data related to the wafers or tool state data such as pressure, humidity, temperature, etc. and performing an analysis of the data and then stopping operation if required 0011. Pasadyn additionally teaches acquiring electrical data 0015 and use of a database unit 340, claim 21 to store the data as well as its use in storing data from plural runs 0035. Pasadyn teaches that the tool state data can comprise external data such as temperature, pressure, etc. 0036, merging/correlating and analysis on a real time basis for a batch/lot 0037 (keying), use of a computer system and bus 0039, use of a processor, interfacing and software 0048, monitoring thickness or a critical dimension 0042, 0050, and analysis of the data 0053. See the abstract; figures; paragraphs 0010,0011, 0015,0016,0032-0042, 0044, 0045, 0048, 0050, 0053,0056, and the claims.

Pasadyn however does not expressly state that the external data relates to the entire facility but implies that it can be since an ambient temperature, pressure, etc. can be used.

It would have been obvious to one of ordinary skill in the art to use the ambient conditions at the factory for the ambient conditions of Pasadyn for ease in measurement.

Pasadyn also does not go into details about the analysis process.

Funk 2005/0165731 teaches managing data in a semiconductor manufacturing process. (abstract) Funk also teaches semiconductor wafer processing 0151,0137, multivariate (statistical) analysis (0136,0137), use of a database and memory, GUI, charting data, adding analysis applications (0072), use of limits (0139,0163), fault

detection and classification and generating alarms (0077,0210), use of both multivariate and univariate relationships (0078,0149,0150,0164,0166), generating reports and charting both univariate and multivariate data (0149,0150,0202,0205,0226), measuring electrical parameters 0046,0115,0116, and use of a probe 0040. Further Funk teaches synchronizing the different types of data (keying, 0007), use of various types of tools including measurement (metrology 0032), sensing internal and external data (0041), use of various types of sensors (0046), storing data in a database and synchronizing the data (0056), data analysis (0048), use of historical data (0076,0172) and detecting trends (0187), periodic sampling (0046,0070), use of a data collection plan that specifies collection, filtering, and storing of data (0114--0116), and use of a computer system (0030). See the abstract; figures; paragraphs 0004-0007, 0030, 0032,0037, 0040,0041, 0046-0049, 0052,0054-0062, 0064,0070, 0072,0074,0076-0078,0085, 0089, 0114-0116, 0132, 0134-0140, 0149-0157,0162-0167,0172-0178,0185, 0187,0189,0202, 0210,0226 and the claims.

It would have been obvious to one of ordinary skill in the art to modify Pasadyn in view of Funk and perform univariate and/or multivariate analysis on the data to provide an intense analysis as taught by Pasadyn 0033.

Further it would have been obvious to one of ordinary skill in the art to modify Pasadyn in view of Funk and also key the data on the basis of time for ease in performing an analysis on the basis of time and sampling time so as to allow an intense analysis of the data as well as trending.

Further it would have been obvious to one of ordinary skill in the art to modify Pasadyn and Funk and take measurements relating to the same data at multiple locations to insure that a reading is accurate or to use the highest/lowest measurement depending on which reading provides the best correlation.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Toprac 6,560,506 and Bode 6,577,914 or also of interest in correlation and external variables.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven R. Garland whose telephone number is 571-272-3741. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPD
Steven R Garland
Examiner
Art Unit 2125


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